

**WHAT IS CLAIMED IS:**

1. A semiconductor device comprising:

a) a semiconductor layer that is provided over an insulation layer;

5 b) a plurality of the same kind of bipolar transistors that are provided on the semiconductor layer in a state that the bipolar transistors are connected in parallel with each other; and

c) an isolation that is provided on the main surface of the semiconductor layer to reach the insulation layer, and provided such that the isolation surrounds a group of or the whole of the plurality of the same kind of bipolar transistors.

2. The semiconductor device according to claim 1, wherein  
15 a resistor is electrically connected to each emitter of the plurality of the same kind of bipolar transistors.

3. The semiconductor device according to claim 2, wherein each resistor is comprised of polycrystalline silicon.

20 4. The semiconductor device according to claim 1, wherein a distance between a contact hole for a base and a contact hole for a collector of the same kind of mutually adjacent bipolar transistors is a minimum distance between the  
25 transistors.

5. The semiconductor device according to claim 1, wherein a distance between a contact hole for a base and a contact hole for a collector of the same kind of mutually

adjacent bipolar transistors is 1  $\mu\text{m}$  or more.

6. A semiconductor device comprising:

5 a) a semiconductor layer that is provided over an insulation layer;

b) a plurality of the same kind of bipolar transistors that are provided on the semiconductor layer in a state that the bipolar transistors are connected in parallel with each other;

10 c) resistors each of which is electrically connected to each of the plurality of the same kind of bipolar transistors; and

d) an isolation that is provided on the main surface of the semiconductor layer to reach the insulation layer, and  
15 provided such that the isolation surrounds a group of or the whole of the plurality of the same kind of bipolar transistors.

7. The semiconductor device according to claim 6, wherein each resistor is comprised of polycrystalline silicon.

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8. The semiconductor device according to claim 6, wherein a distance between a contact hole for a base and a contact hole for a collector of the same kind of mutually adjacent bipolar transistors is a minimum distance between the  
25 transistors.

9. The semiconductor device according to claim 6, wherein a distance between a contact hole for a base and a contact hole for a collector of the same kind of mutually

adjacent bipolar transistors is 1  $\mu\text{m}$  or more.

10. A semiconductor device comprising:

- a) a semiconductor layer that is provided over an  
5 insulation layer;
- b) a plurality of the same kind of first bipolar transistors that are provided in a first region of the semiconductor layer in a state that the bipolar transistors are connected in parallel with each other;
- 10 c) a first isolation that is provided in the main surface of the semiconductor layer to reach the insulation layer, and provided such that the isolation surrounds a group of or the whole of the plurality of the same kind of the first bipolar transistors in the first region;
- 15 d) a plurality of the same kind of second bipolar transistors that are provided in a second region of the semiconductor layer in a state that the bipolar transistors are connected in parallel with each other; and
- e) a second isolation that is provided in the main  
20 surface of the semiconductor layer to reach the insulation layer, and provided such that the isolation surrounds each of the plurality of the same kind of the second bipolar transistors in the second region.

25 11. The semiconductor device according to claim 10, wherein a resistor is electrically connected to each emitter of the plurality of the same kind of the first and second bipolar transistors respectively.

12. The semiconductor device according to claim 11, wherein each resistor is comprised of polycrystalline silicon.
13. The semiconductor device according to claim 10, wherein  
5 a distance between a contact hole for a base and a contact hole for a collector of the same kind of mutually adjacent first bipolar transistors is a minimum distance between the transistors.
- 10 14. The semiconductor device according to claim 10, wherein a distance between a contact hole for a base and a contact hole for a collector of the same kind of mutually adjacent bipolar transistors is 1  $\mu\text{m}$  or more.
- 15 15. The semiconductor device according to claim 10, wherein a distance between a contact hole for a base and a contact hole for a collector of the same kind of mutually adjacent first bipolar transistors is equal to a distance  
20 between a contact hole for a base and a contact hole for a collector of the same kind of mutually adjacent second bipolar transistors.
16. The semiconductor device according to claim 10, wherein  
25 an optimum current value of the first bipolar transistor is larger than an optimum current value of the second bipolar transistor.
17. The semiconductor device according to claim 16, wherein a permissible maximum current value of the first bipolar

transistor is larger than a permissible maximum current value of the second bipolar transistor by 1.5 times or more.

18. The semiconductor device according to claim 10, wherein  
5 the first bipolar transistor constitutes a circuit that requires a heat radiation characteristic that is larger than a heat radiation characteristic of the second bipolar transistor, and the second bipolar transistor constitutes a circuit that requires a higher speed than that of the first bipolar  
10 transistor.